

REMARKS

The Abstract has been amended such that it does not contain claim language, and such that it is less than 150 words.

The Examiner has rejected claims 1-11, 13-16 and 18-20 under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Publication No. 4-201998 to Tamura. The Examiner has further rejected claims 1-20 under 35 U.S.C. 103(a) as being unpatentable over Tamura in view of U.S. Patent 5,729,605 to Bobisuthi.

The Tamura reference discloses a speaker box having a first and a second chamber separated by an internal wall, a speaker unit mounted in an opening in the internal wall, a first vent in the internal wall pneumatically coupling the first and second chambers, and second and third vents coupling the first and second chambers, respectively, with the environment outside of the speaker box.


Applicant would like to point out that the Tamura reference is discussed in the subject specification on page 3, line 23 to page 4, line 3.

In the '102(b) rejection, the Examiner states that Tamura teaches "the ratio of the acoustic mass of the internal vent to the second external vent being approximately 3/1 to 7/1, and the ratio of the acoustic mass of the first external vent to the second external vent being approximately 15/1 to 30/1." However, in the

'103(a) rejection, the Examiner states that Tamura "fails to specifically teach that the ratio..." Applicant submits that this is contradictory.

Notwithstanding the above contradiction, Applicant has reviewed a translation of the Japanese reference, and while Tamura mentions the vents having acoustic masses, Applicant submits that Tamura neither shows nor suggests that the amount of the acoustic mass of any vent with respect to the acoustic mass of another of the vents should be within any ratio.

Applicant submits that the ratio range of the acoustic mass of the internal vent to the acoustic mass of the second external vent is not arbitrary, but rather, serves a particular function. As described in the specification on page 6, lines 18-23, when the ratio is within the claimed range, an appreciable improvement in the acoustical output of the loudspeaker is achieved over a reasonably broad operating band.


 The Bobisuthi et al. patent discloses a headset with user adjustable frequency response in which the venting and volume are variable. However, Applicant submits that Bobisuthi et al. does not mention acoustic mass nor the ratio of the acoustic masses of the vents, nor the ratio of the volumes of a first chamber to a second chamber of the loudspeaker.

In view of the above, Applicant believes that the subject invention, as claimed, is neither anticipated nor rendered obvious

by the prior art, either individually or collectively, and as such,
is patentable thereover.

Applicant believes that this application, containing
claims 1-20, is now in condition for allowance and such action is
respectfully requested.

Respectfully submitted,

by 
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On March 16, 2004
By Burnett James

ABSTRACT OF THE DISCLOSURE

A loudspeaker ~~that~~ includes an acoustical enclosure that ~~has~~having an internal wall that ~~divides~~dividing the enclosure into
5 first and second subchambers, an electro-acoustical transducer
having a vibratable speaker cone mounted in an opening ~~provided in~~
the internal wall of the acoustical enclosure, an internal vent
~~provided in~~ the internal wall of the acoustical enclosure for
pneumatically coupling the first and second subchambers, a first
10 external vent ~~provided in~~ a wall of the first subchamber for
pneumatically coupling the first subchamber to an exterior
environment outside of the acoustical enclosure, and a second
external vent ~~provided in~~ a wall of the second subchamber for
pneumatically coupling the second subchamber to the exterior
15 environment. ~~In one embodiment,~~ a ratio of the acoustic masses of
the internal vent to the ~~acoustic mass of~~ the second external vent
~~is in a range of being~~ approximately 3/1 to 7/1. ~~In another~~
embodiment, and a ratio of the acoustic masses of the first
external vent to the ~~acoustic mass of~~ the second external vent is
20 ~~in a range of being~~ approximately 15/1 to 30/1. ~~In both~~
embodiments, ~~a ratio of the volume of the first subchamber to the~~
~~volume of the second subchamber is in a range of approximately 0.3~~
~~to 2.5. In both embodiments, at least one of the internal and/or~~

~~external vents can be substituted with a passive radiating element~~
25 ~~such as a drone cone.~~